

TECHNICAL SUPPORT DOCUMENT

for

Notice of Direct Final Rulemaking

on

Sulfur Dioxide (SO₂) Redesignation Request and Maintenance Plan
for Morenci, Arizona

Air Division

U.S. Environmental Protection Agency, Region 9

March 2004

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**Technical Support Document
Morenci SO₂ Redesignation Request and Maintenance Plan SIP Revisions**

TABLE OF CONTENTS

SECTION 1 – Introduction, Summary of Action and Historical Background

A.	Introduction.....	1
B.	Summary of Action.....	1
C.	Description of Area and Area Designation History.....	1
D.	Background for this Action.....	2
E.	Who to Contact for More Information.....	2

SECTION 2 – Clean Air Act (CAA) Requirements

A.	Applicable CAA Provisions for SO ₂ Nonattainment Area Plans.....	3
B.	Applicable CAA Provisions for SO ₂ Maintenance Plans and Redesignation Requests.....	3
C.	EPA Policy Guidance.....	4

SECTION 3 – Analysis and Approval of Morenci Maintenance Plan and Redesignation Request SIP Revisions

A.	Summary of Morenci Maintenance Plan and Redesignation Request SIP Revisions.....	5
B.	Completeness Finding.....	7
C.	Is the Maintenance Plan Approvable?.....	7
D.	Has the State Met the Redesignation Provisions of CAA Section 107(d)(3)(E)?.....	8

SECTION 4 - Modeling Analysis and Additional Materials

A.	Summary of Modeling Approach.....	10
B.	Choice of Model.....	10
C.	Development of Inputs.....	10
D.	Model Performance.....	12
E.	Evaluation of Overall Modeling Approach.....	12

Appendix A - The Applicable SO₂ SIP for Arizona.....	14
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SECTION 1 - Introduction, Summary of Action, and Historical Background

A. Introduction

The Arizona Department of Environmental Quality (ADEQ) has submitted a revision to its state implementation plan (SIP) with a redesignation request and maintenance plan for the Morenci SO₂ nonattainment area. The main source of SO₂ emissions which caused the area to be in nonattainment, a copper smelter known as the Phelps Morenci Installation (PDMI), ceased operation in 1984. Under an EPA policy signed on October 18, 2000,¹ we can approve SO₂ redesignation requests in areas where past violations were due to a single source, where the source has shut down, and where monitors have also been removed (i.e., the area does not have eight quarters of clean monitoring data available for redesignation). Pursuant to our authority under the Clean Air Act (CAA or Act), the revisions to the plan are reviewed here and recommendations made regarding the action the United States Environmental Protection Agency (EPA) is taking on Arizona's submittal.

In this technical support document, we

- Summarize the requirements for redesignation requests and maintenance plans for SO₂
- Describe our analysis of the Morenci SIP
- Provide our proposed conclusions on the approvability of the Morenci maintenance plan and redesignation request based on our technical analysis.

B. Summary of Action

EPA is approving the maintenance plan for the Morenci SO₂ nonattainment area in Greenlee County, Arizona and granting the request submitted by the State to redesignate this area from nonattainment to attainment for the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO₂).

C. Description of Area and Area Designation History

Morenci is a town in eastern Greenlee County near the border of Arizona and New Mexico. The Phelps Dodge Morenci Incorporated (PDMI) operation was the largest SO₂ point source in the Morenci nonattainment area during its operation. PDMI was located next to the Morenci copper mine, one of the largest copper-producing operations in North America. The Phelps Dodge smelter was located in the Gila River airshed, just north of the Gila River at an altitude of about 4500 feet above sea level. PDMI was located close to the community of Morenci.

On March 3, 1978, at 43 FR 8968, for lack of a State recommendation, we designated the entire

¹Seitz Memo discussed in Section 2.C., below.

area of Greenlee County as a primary SO₂ nonattainment area based on monitored violations of the primary SO₂ NAAQS in the area between 1975 and 1977. At the request of the Arizona Department of Environmental Quality, the nonattainment area was subsequently reduced to eight townships in and around Morenci on April 10, 1979 (44 FR 21261). As a result, townships T3S,R28E; T3S, R29E; T3S, R30E; T4S, R28E; T4S, R29E; T4S, R30E; T5S, R28E; and T5S, R29E comprise the nonattainment area. Township T5S, R30E is designated as “cannot be classified.”

On the date of enactment of the 1990 Clean Air Act Amendments, SO₂ areas meeting the conditions of section 107(d) of the Act, including pre-existing SO₂ nonattainment areas, were designated nonattainment for the SO₂ NAAQS by operation of law. Thus, the Morenci area remained nonattainment for the primary SO₂ NAAQS following enactment of the 1990 CAA Amendments on November 15, 1990. These nonattainment designations and classifications were codified in 40 CFR part 81. See 56 FR 56694 (November 6, 1991). For the definition of the Morenci nonattainment area, see 40 CFR 81.303.

D. Background for this Action

On December 31, 1984, the PDMI smelter was permanently deactivated. Dismantling of the Morenci facility began in 1995 and was complete by December 1996. On October 29, 1997, the Arizona Department of Environmental Quality (ADEQ) confirmed that the facility was dismantled and no longer existed at the former site. The area remains sparsely settled, and there are industrial or commercial activities such as a copper mine, cotton gins, a hot mix asphalt facility, and a federal correctional institute in or near the nonattainment area that produce small quantities of SO₂ emissions. No significant new sources have located in the area, and the smelter was the obvious cause of past violations .

E. Who to Contact for More Information

For more information on...	Please Contact	At
Arizona’s SO ₂ SIPs	Wienke Tax	(520) 622-1622 tax.wienke@epa.gov
The docket	Marty Robin	(415) 972-3961 robin.marty@epa.gov

SECTION 2 – Clean Air Act (CAA) Requirements

A. Applicable CAA Provisions for SO₂ Nonattainment Area Plans

The air quality planning requirements for SO₂ nonattainment areas are set out in subparts 1 and 5 of Part D of title I of the Act. We have issued guidance in a General Preamble describing our views on how we will review SIPs and SIP revisions submitted under title I of the Act, including those containing SO₂ nonattainment area and maintenance area SIP provisions. 57 FR 13498 (April 16, 1992); 57 FR 18070 (April 28, 1992). The General Preamble discusses our interpretation of the title I requirements, and lists SO₂ policy and guidance documents.

Statutory Provisions

CAA Sections 191 and 192 address requirements for SO₂ nonattainment areas designated subsequent to enactment of the 1990 CAA Amendments and areas lacking fully approved SIPs immediately before enactment of the 1990 Clean Air Act Amendments. Morenci falls into neither of these categories and is therefore subject to the requirements of subpart 1 of Part D of title I of the CAA (Sections 171-179B). Section 172 of this subpart contains provisions for nonattainment plans in general; these provisions were not significantly changed by the 1990 CAA Amendments.

B. Applicable CAA Provisions for SO₂ Maintenance Plans and Redesignation Requests

What are the Statutory Provisions?

CAA Section 107(d)(3)(E). The 1990 CAA Amendments revised section 107(d)(3)(E) to provide five specific requirements that an area must meet in order to be redesignated from nonattainment to attainment. They are: 1) the area must have attained the applicable NAAQS; 2) the area has met all relevant requirements under section 110 and Part D of the Act; 3) the area has a fully approved SIP under section 110(k) of the Act; 4) the air quality improvement must be permanent and enforceable; and, 5) the area must have a fully approved maintenance plan pursuant to section 175A of the Act.

CAA Section 175A. CAA section 175A provides the general framework for maintenance plans. The maintenance plan must provide for maintenance of the NAAQS for at least 10 years after redesignation, including any additional control measures as may be necessary to ensure such maintenance. In addition, maintenance plans are to contain such contingency provisions as we deem necessary to assure the prompt correction of a violation of the NAAQS that occurs after redesignation. The contingency measures must include, at a minimum, a requirement that the state will implement all control measures contained in the nonattainment SIP prior to redesignation. Beyond these provisions, however, CAA section 175A does not define the content of a maintenance plan.

C. EPA Policy Guidance

Our primary general guidance on maintenance plans and redesignation requests is a September 4, 1992 memo from John Calcagni, entitled “Procedures for Processing Requests to Redesignate Areas to Attainment” (“Calcagni Memo”). Specific guidance on SO₂ redesignations also appears in a January 26, 1995 memo from Sally L. Shaver, entitled “Attainment Determination Policy for Sulfur Dioxide Nonattainment Areas” (“Shaver Memo”).

Our historic redesignation policy for SO₂ has called for eight quarters of clean ambient air quality data as a necessary prerequisite to redesignation of any area to attainment. On October 18, 2000, we issued a policy to provide guidance on SO₂ maintenance plan requirements for an area lacking monitored ambient data, if the area’s historic violations were caused by a major point source that is no longer in operation. See memo from John S. Seitz, entitled “Redesignation of Sulfur Dioxide Nonattainment Areas in the Absence of Monitored Data” (“Seitz Memo”). In order to allow for these areas to qualify for redesignation to attainment, this policy requires that the maintenance plan address otherwise applicable provisions, and include: (1) emissions inventories representing actual emissions when violations occurred; current emissions; and emissions projected to the 10th year after redesignation; (2) dispersion modeling showing that no NAAQS violations will occur over the next 10 years and that the shut down source was the dominant cause of the high concentrations in the past; (3) evidence that if the shut down source resumes operation it would be considered a new source and be required to obtain a permit under the Prevention of Significant Deterioration provisions of the CAA; and (4) a commitment to resume monitoring before any major SO_x source commences operation

We have determined that Morenci meets the criteria for redesignation under the Seitz Memo, and have conducted our analysis of the maintenance plan and redesignation request according to that memo.

SECTION 3 - Analysis and Approval of Morenci Maintenance Plan and Redesignation Request SIP Revisions

A. Summary of Morenci Maintenance Plan and Redesignation Request SIP Revisions

As discussed below, the State has addressed the requirements in the Seitz Memo for emissions inventories, modeling, permitting of new major sources, and the agreement to commence monitoring if a new major source locates in the area. Therefore, the State has met the special criteria in the Seitz Memo for approval of maintenance plans and redesignation requests.

Emissions Inventory

The State provided the three emissions inventories specified in the Seitz Memo for the sources in, and within 50 kilometers of, the Morenci nonattainment area. For a representative year when the copper smelter was in operation (1984), direct SO_x emissions from smelting operations were 82,432 tons per year (tpy). ADEQ identified 186.5 tpy SO_x emissions in, or within 50 kilometers of, the nonattainment area in 1999 based on potential to emit (PTE), and ADEQ projected 208 tpy SO_x emissions based on PTE in, or within 50 kilometers of, Morenci in the 10th year after redesignation (2015). However, actual emissions of all sources in or within 50 km of the Morenci nonattainment area were 4.1 and 1.2 tpy respectively. We conclude that the inventories are complete, accurate, and consistent with applicable CAA provisions and the Seitz Memo.

Modeling

Past EPA policy memoranda on SO₂ redesignations all ask for dispersion modeling. The Seitz memo asks for dispersion modeling of all point sources within 50 km of the nonattainment area boundary. Section 7.2 of Enclosure 3 of the SIP submittal contains a commitment to perform modeling should any new sources locate in the area. The submittal identifies only a single point source in the nonattainment area, the Phelps Dodge Morenci Mine (PDMM), a copper mine, with 2000 SO₂ emissions of 3.3 tpy, and 2015 projected emissions of 3.6 tpy. The submittal also identifies five sources in the 50 km boundary area, each of which emitted less than one ton SO₂ per year in 1999. Screening dispersion modeling was performed with ISCST3 using conservative assumptions about the source parameters and the meteorology. For example, the modeling assumed the PDMM copper mine emitted SO₂ at its highest potential to emit (PTE) of 138 tpy, though in 1999 it emitted only 3.3 tpy, as noted previously. According to the conservative screening modeling and assuming simple terrain, the maximum ambient air concentration due to the largest of the remaining sources is less than five percent of the SO₂ NAAQS. Assuming complex terrain, the conservative screening modeling showed the maximum ambient air concentration due to the PDMM copper mine is 21 percent of the NAAQS. EPA therefore finds that the ambient SO₂ projection requirement for redesignations and maintenance plans is met. For further details, see Section 4.

The October 18, 2000 Seitz memo requires a modeling analysis that shows point sources

were the dominant sources contributing to high SO₂ concentrations in the airshed. While Multipoint Rollback (MPR) modeling has been accepted by EPA for modeling of smelters in Arizona, as a rollback method it assumes that the monitored SO₂ violations are completely due to the smelter being modeled. Thus, it cannot be relied upon for this analysis. Instead, screening modeling can be used to show that non-smelter sources have only an insignificant contribution. Since their emissions have changed relatively little since the time that the smelter was shut down and dismantled, this same screening modeling shows that the non-smelter sources were insignificant in the past, and hence the smelter was the dominant source contributing to past high SO₂ concentrations. EPA therefore finds that the ambient SO₂ modeling requirement for redesignations and maintenance plans is substantially met.

Permitting of New Sources

For the Morenci SO₂ nonattainment area, the nonattainment area new source review (NSR) permit program responsibilities are held by ADEQ. ADEQ administers the preconstruction review and permitting provisions of Arizona Administrative Code (A.A.C.), Title 18, Chapter 2, Articles 3 and 4. All new major sources and modifications to existing major sources are subject to the NSR requirements of these rules. We have not yet fully approved the ADEQ NSR rules. Arizona's NSR rules are at A.A.C. R9-3-302.

Non-attainment NSR Permitting of New Sources

CAA Section 172(c)(5) requires NSR permits for the construction and operation of new and modified major Morenci stationary sources anywhere in nonattainment areas. We have determined that areas being redesignated from nonattainment to attainment do not need to comply with the requirement that an NSR program be approved prior to redesignation provided that the area demonstrates maintenance of the standard without part D nonattainment NSR in effect. The rationale for this decision is described in a memorandum from Mary Nichols dated October 14, 1994 ("Part D New Source Review (Part D NSR) Requirements for Areas Requesting Redesignation to Attainment"). We have determined that the maintenance demonstration for Morenci does not rely on nonattainment NSR. Prevention of Significant Deterioration (PSD) is the replacement for NSR, and part of the obligation under PSD is for a new source to review increment consumption and maintenance of the air quality standards. PSD also requires preconstruction monitoring. Therefore, the State need not have a fully approved nonattainment NSR program prior to approval of the redesignation request.

Attainment PSD Permitting of New Sources

ADEQ has a Prevention of Significant Deterioration (PSD) permitting program (A.A.C. R9-3-304) that was established to preserve the air quality in areas where ambient standards have been met. The State's PSD program for all criteria pollutants except PM-10 was approved into the SIP effective May 3, 1983 (48 FR 19878). The federal PSD program for PM-10 was delegated to the State on March 12, 1999. The PSD program requires stationary sources to undergo preconstruction review before facilities are constructed, modified, or reconstructed and to apply Best Available Control Technology (BACT). These programs will apply to any major source

wishing to locate in the Morenci area once the area is redesignated to attainment. The ADEQ commitment to treat any major source in or near Morenci as "new" under the PSD program satisfies the preconstruction permit provision of the Seitz memo as one of the prerequisites to redesignation.

Monitoring

ADEQ has confirmed that the State commits to resume monitoring before any major source of SO₂ commences to operate. Moreover, the PSD permit program requires that permit applicants conduct preconstruction monitoring to identify baseline concentrations. Together, these commitments address the monitoring provision of the Seitz Memo.

B. Completeness Finding

ADEQ submitted the Morenci Maintenance Plan and Redesignation Request on June 21, 2002. The Act requires States to observe certain procedural requirements in developing implementation plans and plan revisions for submission to EPA. Section 110(a)(2) of the Act provides that each implementation plan submitted by a State must be adopted after reasonable notice and public hearing.² CAA Section 110(l) similarly provides that each revision to an implementation plan submitted by a State under the Act must be adopted by such State after reasonable notice and public hearing.

EPA must determine whether a submittal is complete and therefore warrants further EPA review and action [see CAA Section 110(k)(1) and 57 FR 13565]. The EPA's completeness criteria for SIP submittals are set out at 40 CFR Part 51, Appendix V (1991), as amended by 57 FR 42216 (August 26, 1991). The EPA attempts to make completeness determinations within 60 days of receiving a submission. However, under CAA Section 110(k)(1)(B), a submittal is deemed complete by operation of law if a completeness determination has not made by EPA within six months after receipt of the submission. In an October 30, 2002 letter from Jack Broadbent, Region 9 Air Division Director, to Ric Tobin, Acting Director, ADEQ, we found that the submittal met the completeness criteria in 40 CFR 51, Appendix V.

C. Is the Maintenance Plan Approvable?

As discussed above, CAA section 175A sets forth the statutory requirements for maintenance plans, and the Calcagni and Shaver Memos cited above contain specific EPA guidance. The only maintenance plan element not covered by the Seitz Memo is the contingency provision. CAA section 175A provides that maintenance plans "contain such contingency provisions as the Administrator deems necessary to assure that the State will promptly correct any violation of the standard which occurs after the redesignation of the area as an attainment area."

²Also, section 172(c)(7) of the Act requires that plan provisions for nonattainment area to meet the applicable provisions of section 110(a)(2).

The Morenci Maintenance Plan includes the State's commitment to continue to implement and enforce measures necessary to maintain the SO₂ NAAQS. ADEQ's current operating permit program places limits on SO₂ emissions from existing sources. Should an existing facility want to upgrade or increase SO₂ emissions, the facility would be subject to the PSD program. Should a new facility be constructed in the Morenci area, the facility would also be subject to PSD as required in the Calcagni Memo.

If these measures prove insufficient to protect against exceedances of the NAAQS, the State has also committed to adopt, submit as a SIP revision, and implement expeditiously any and all measures needed to ensure maintenance of the NAAQS.

The Calcagni Memo emphasizes the importance of specific contingency measures, schedules for adoption, and action levels to trigger implementation of the contingency plan. Since there are no remaining sources of SO₂ emissions of the magnitude of the Phelps Dodge smelter and there is no SO₂ monitoring in the Morenci area, we agree with the State that this level of specificity is not appropriate, and we conclude that the State's commitment satisfactorily addresses the CAA provisions. Since there are neither significant SO₂ sources with respect to actual emissions nor SO₂ monitoring in the Morenci area, we agree with the State that the State's PSD permitting program is sufficient to track future air quality trends and to assure that the Morenci area will not violate the NAAQS. If the State identifies the potential for a NAAQS violation through the permitting process, the State would ascertain what measures would be needed to avoid the violation.

D. Has the State Met the Redesignation Provisions of CAA Section 107(d)(3)(E)?

Has the area attained the 24-hour and annual SO₂ NAAQS?

As discussed above, the normal prerequisite for redesignation is submittal of quality-assured ambient data with no violations of the SO₂ NAAQS for the last eight consecutive quarters. However, the Seitz Memo recognizes that states should be provided an opportunity to request redesignation where there is no longer monitoring but where there is no reasonable basis for assuming that SO₂ violations persist after closure of the sources that were the primary or sole cause of these violations. Morenci is such an area, and the State has submitted convincing evidence that no major stationary sources of SO_x emissions remain in operation in or within 50 kilometers of the area with respect to actual emissions that might cause a violation of the SO₂ NAAQS.

Has the area met all relevant requirements under section 110 and Part D of the Act?

CAA Section 110(a)(2) contains the general requirements for SIPs (enforceable emission limits, ambient monitoring, permitting of new sources, adequate funding, etc.) and Part D contains the general provisions applicable to SIPs for nonattainment areas (emissions inventories, reasonably available control measures, demonstrations of attainment, etc.). Over the years, we have approved Arizona's SIP as meeting the basic requirements of CAA Section 110(a)(2), and the CAA Part D requirements for Morenci addressed primarily by the regulations applicable to

the Phelps Dodge facility during the period of its operation. The State has thus met the basic SIP requirements of the CAA.

Does the area have a fully approved SIP under section 110(k) of the Act?

Yes, Arizona has a fully-approved SIP with respect to the Morenci area. The SIP contents are listed in Appendix A.

Has the State shown that the air quality improvement in each area is permanent and enforceable?

The Maintenance Plan shows that the exclusive cause of past SO₂ NAAQS violations (the Phelps Dodge copper smelter in Morenci) no longer exists. Because the source closure is complete and final, and all permits for the facility have expired, the “permanent and enforceable” requirement has been met. Minor sources which exist in the area will not, in the aggregate, cause a violation of the NAAQS. As a result, there is no reason to expect that SO₂ ambient concentrations will exceed background levels.

Does the area have a fully approved maintenance plan pursuant to section 175A of the Act?

We are approving the Morenci Maintenance Plan in this action.

SECTION 4 - Modeling Analysis and Additional Materials

A. Summary of Modeling Approach

The standard EPA screening dispersion model, SCREEN3 (version 96043) was chosen to conservatively estimate the impact of remaining SO₂ sources in or near the Morenci nonattainment area (*Guideline on Air Quality Models*, 40 CFR 51, Appendix W). SCREEN3 steps through all 54 combinations of wind speed and atmospheric stability classes that are used in standard EPA Gaussian dispersion models, and reports the highest concentration from among the 54. Performed for a range of distances from the source, this calculation provides a conservatively high estimate of 1-hour average concentrations. Effectively, this assumes that the worst case condition (which may not even actually occur at the source's area) exists all the time, e.g. for a full 24 hours in the case of the 24-hour SO₂ NAAQS. Wind direction-persistence factors were applied to convert the SCREEN3 result to 3-hour, 24-hour, and annual estimates, in accordance with EPA guidance (*Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised* (EPA-454/R-92-019, October 1992)).

B. Choice of Model

In the first stage of modeling, the standard EPA screening dispersion model, SCREEN3 (version 96043) was used (*Guideline on Air Quality Models*, 40 CFR 51, Appendix W). SCREEN3 steps through all 54 combinations of wind speed and atmospheric stability classes that are used in standard EPA Gaussian dispersion models, and reports the highest concentration from among the 54 combinations. Performed for a range of distances from the source, this calculation provides a conservatively high estimate of 1-hour average concentrations. Effectively, this assumes that the worst case condition (which may not occur at the source's area) exists all the time, e.g. for a full 24 hours in the case of the 24-hour SO₂ NAAQS. Wind direction-persistence factors were applied to convert the SCREEN3 result to 3-hour, 24-hour, and annual estimates, in accordance with EPA guidance (*Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised*, EPA-454/R-92-019, October 1992).

C. Development of Inputs

For the SCREEN3 simulation, which can model only a single stack at a time, all PDMM copper mine emissions were assumed to be emitted from the emission point with the largest emissions, a boiler stack (which also vents gas turbine emissions). Appendix C.6, Table B of the submittal gives a 2015 potential to emit (PTE) of 138 tons/year for all PDMM emission points together.

Because of the nearby complex terrain (defined as terrain with elevation greater than plume height), SCREEN3's complex terrain option was used, with terrain heights derived from USGS digital elevation (DEM) data, Clifton quadrangle (30 meter resolution), towards the west and towards the north where land rises quickly ("west slice" and "north slice"). The SCREEN3 results were less than 25% of any SO₂ NAAQS (see Table 4-1 below).

In the second stage of modeling, the standard EPA refined dispersion ISCST3 was used (version 02035). This was done because of the high estimated impacts with SCREEN3, the variety of emission points within PDMM, and the presence of complex terrain of varying distances from the emission points. Stack parameters and source locations were provided by PDMM's Title V permit, and by telephone by Brian Musser of Phelps Dodge.³ Property boundary locations were taken from a map in the Title V permit.

ISCST3 was run in a screening mode, with the same 54 combinations used with SCREEN3 described above. In conjunction with these, wind directions at every five degrees of the compass were used, for a total of 3888 combinations (54*72). The maximum from among these was conservatively chosen as the model result. A coarse receptor grid (receptor spacing 100 meters, on a 12 kilometer square; elevations from Clifton and Copper Gulch quad DEMs) was used at first (ISCST file "PDMM5a"). Areas near the maxima found using the coarse grid were then remodeled using two smaller, finer receptor grids (25 meter spacing, a 1 km square and a 1x2 km rectangle, "PDMM5b" and "PDMM5d"). These maxima included the effect of all emission points, but were primarily due to the combustion turbines and to the diesel generator, respectively. Finally, additional receptors along the property boundary near the highest concentrations were modeled (25 m receptor spacing): boundaries east and west of the Metcalf Combined Cycle Power Plant, and the boundary south of the diesel generator and tailing ponds ("PDMM5bb" and "PDMM5dd").

No other sources were modeled because of their low or negligible emissions and the fact that they are in the 50 kilometer buffer area. The two largest sources in the 50 kilometer buffer area are A. J. Gilbert Construction Company's hot mix asphalt facility with a 2015 PTE of 41 tons/year and AZCO mining, an open pit heap leach copper mine facility, with a 2015 PTE of 28.4 tons/year. Other sources including several cotton gins and a prison had projected PTE ranging from .01 to .47 tons/year for 2015.

³Telephone conversation between Scott Bohning of US EPA Region 9 and Brian Musser, Phelps-Dodge Corporation, December 4, 2002. See also memo to file.

D. Model Performance

Table 4-1. SO₂ Modeling Results for Phelps Dodge Morenci, Inc. Copper Mine

("conv" = averaging time conversion factor or wind direction-persistence factor)

PDMM3 SCREEN3 runs, 11/7/02; ISCST3 runs, 12/12/02								
SCREEN3 with emission rate = 4 g/s = 138 tons/yr * 0.0288								
simple terrain								
	NAAQS	conv	west slice modeled	NAAQS	north slice modeled	NAAQS	max modeled	NAAQS
1		1	38.69		38.69			
3	1300	0.9	34.821	3%	34.821	3%	35	3%
24	365	0.4	15.476	4%	15.476	4%	15	4%
8760	80	0.08	3.0952	4%	3.0952	4%	3	4%
complex terrain								
	NAAQS	conv	west slice modeled	NAAQS	north slice modeled	NAAQS	max modeled	NAAQS
3	1300	2.25	188.01	14%	97.9425	8%	188	14%
24	365	1	83.56	23%	43.53	12%	84	23%
8760	80	0.2	16.712	21%	8.706	11%	17	21%
ISCST3, screening meteorology								
Turbine high			max anywhere		E & W boundaries			
	NAAQS	conv	modeled	NAAQS ratio	modeled	NAAQS ratio		
3	1300	0.9	312.3	24%	36.9	3%		
24	365	0.4	138.8	38%	16.4	4%		
8760	80	0.08	27.76	35%	3.28	4%		
Diesel Generator high			max anywhere		Southern boundary			
	NAAQS	conv	modeled	NAAQS ratio	modeled	NAAQS ratio		
1		1	1278		31			
3	1300	0.9	1150.2	88%	27.9	2%		
24	365	0.4	511.2	140%	12.4	3%		
8760	80	0.08	102.24	128%	2.48	3%		

E. Evaluation of Overall Modeling Approach

ISCST3 modeling showed exceedances of the 24-hour and annual SO₂ NAAQS, due to a diesel generator. Not all stack parameters (e.g. temperature, exit velocity) were available for this generator, so typical values from a different permit application were used. Heights and temperatures were varied to test the effect on the results; exceedances persisted ("PDMM6"). However, when property boundaries were modeled, it was found that the exceedances were all within the boundaries. Such locations are not considered ambient air subject to the NAAQS, since the public does not have access to them. Concentration maxima due to the diesel generator drop to 50 percent of NAAQS within 80 meters, and to 10% of NAAQS within 400 meters (1/4 mile) of the generator. The maximum along nearby boundaries is under 5 percent of any SO₂ NAAQS.

Since the maximum impacts are well below the NAAQS, this source does not cause any SO₂ NAAQS exceedances in the Morenci nonattainment area. Since the other remaining SO₂ sources are small and in the 50 km buffer area outside the nonattainment area, they also do not cause exceedances.

EPA finds that the ambient SO₂ projection requirement for redesignations and maintenance plans is met by the submittal. In addition, since the existing source, Phelps Dodge Morenci Copper Mine, is not causing NAAQS exceedances now, we can conclude the closed smelter can be presumed to have been the source of the past violations.

APPENDIX A - The Applicable SO₂ SIP for Arizona

I. Is the Applicable Implementation Plan Fully Approved?

The applicable implementation plan must be fully approved for the Morenci area to be redesignated to attainment. CAA Section 107(d)(3)(E)(ii) states that the Administrator may not promulgate a redesignation of a nonattainment area (or portion thereof) to attainment unless the Administrator has fully approved the applicable implementation plan for the area under CAA Section 110(k). See 42 U.S.C. § 7407(d)(3)(E)(ii) (CAA § 107). “Applicable implementation plan” means the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 7410 [SIPs] or promulgated under section 7410(c), [FIPs] or promulgated or approved pursuant to regulations under section 7601(d) [TIPs] and which implements the relevant requirements of the Clean Air Act. See 42 U.S.C. § 7602(q) (CAA § 302). An area cannot be redesignated if a required element of its plan is the subject of a disapproval; a finding of failure to submit or to implement the SIP or partial, conditional or limited approval. However, this does not mean that earlier issues with regard to the SIP will be reopened. Regions should not reconsider those things that have already been approved and for which the Clean Air Act Amendments did not alter what is required. In contrast, to the extent the Amendments add a requirement or alter an existing requirement so that it adds something more, Regions should consider those issues. In addition, requests from areas known to be affected by dispersion techniques which are inconsistent with EPA guidance will continue to be considered unapprovable under section 110 and will not qualify for redesignation. Calcagni Memorandum at 3.

A. What is the Applicable Implementation Plan for the Morenci Area/Control of SO₂?

The “**applicable implementation plan**” means the portion (or portions) of the implementation plan, *or most recent revision thereof*, which has been approved under section 7410 [SIPs] or promulgated under section 7410(c) [FIPs] or promulgated or approved pursuant to regulations under section 7601(d) [TIPs] and which implement the relevant requirements. See 42 U.S.C. § 7602(q) (CAA § 302){emphasis added}. The “applicable implementation plan” is thus the portions of the plans which are the most recent revisions and which (1) apply to the Morenci area and (2) implement the relevant requirements of the Clean Air Act with respect to control of sulfur dioxide. The relevant area for this redesignation is the Morenci area, located in Greenlee County, but subject to ADEQ oversight. Thus, the relevant Arizona SIP is the relevant portions of the SIP implemented by ADEQ.

ADEQ

The applicable implementation plan, with respect to ADEQ, is found at 40 CFR 52.120. We examined the applicable SIP, and also looked at the disapprovals listed in 40 CFR 52.125 and no disapprovals remain relevant to the applicable SIP. The applicable plan is fully approved.

B. Is the Applicable Implementation Plan fully approved? (Disapprovals)

Despite the disapprovals which are still listed at 40 CFR 52.125, the relevant SIP is, or through this action will be, fully approved.

Upon approval of the maintenance plan, Sections 52.125(a)(1) and 52.135(a)(2) will no longer apply to the Morenci plan, to the extent that these sections even remain relevant to the Morenci area now that there is no copper smelter in Morenci. We have determined that the language in 40 CFR 52.125(a) is no longer applicable to the Morenci area because in our original approval of the MPR approach (48 FR 1717), we explicitly stated that "Failure to submit SIP revisions by August 1, 1984 will not result in the disapproval of the MPR regulations but will result in EPA promulgation of new fugitive control strategies and regulations (if necessary) for each smelter town." Although a fugitive study was conducted by Phelps Dodge for Morenci and a report finalized on April 12, 1982, the issue of a study of fugitive emissions and EPA promulgating our own fugitive control regulations became moot when the Morenci smelter permanently closed in 1985.

The other disapprovals listed in 40 CFR 52.125 are either not relevant to the Morenci area, or discuss SIP rules which have already been revised. In addition, some of the language in section 52.125 is outdated and can be removed from the CFR (however, updating the CFR will occur separately from this approval action).

